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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,980	12/06/2001	Thomas H. Baum	260-CIP-DIV	5984
25559	7590	09/26/2005	EXAMINER	
ATMI, INC. 7 COMMERCE DRIVE DANBURY, CT 06810			TALBOT, BRIAN K	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/008,980	Applicant(s) BAUM ET AL.	
	Examiner Brian K. Talbot	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 7, 10, 12-22, 24-26, 31-36 and 38-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 10, 12, 24, 25, 31-34, 40 and 41 is/are allowed.
- 6) ☐ Claim(s) 1-4, 7, 13-22, 26, 35, 36, 38, 39, 42 and 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/14/05</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. The amendment filed 7/14/05 has been considered and entered. Claims 5,8,9,11,23,27-30 and 37 have been canceled. Claims 38-43 have been added. Claims 1-4,6,7,10,12-22,24-26,31-36 and 38-43 remain in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In light of the amendment filed 7/14/05, the 35 USC 112 rejections have been withdrawn.

Claim Rejections - 35 USC § 103

4. Claims 1-4,7,13-22,26,35-39,42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakabayashi et al. (6,271,077) in combination with Hoke et al., "Low-temperature Vapor deposition of High-purity Iridium Coatings from Cyclooctadiene complexes of Iridium".

Nakabayashi et al. (6,271,077) teaches coating an iridium film by CVD in a hydrogen and/or oxygen atmosphere. Iridium oxide is formed when the atmosphere is oxygen. The iridium precursor is Ir(DPM)₃ or Ir(acac)₃ (col. 25, line 40 – col. 30, line 55). Iridium films can be used in capacitor manufacture with deposition of ferroelectric films such as strontium titanate (SrTiO₃), PZT and SBT.

Nakabayashi et al. (6,271,077) fails to teach using an organic solvent solution as the iridium precursor.

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Hoke et al., "Low-temperature Vapor deposition of High-purity Iridium Coatings from Cyclooctadiene complexes of Iridium" teaches MOCVD of Iridium coating which utilize organic solvent precursors.

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Nakabayashi et al. (6,271,077) to utilize the MOCVD precursors of Hoke et al., "Low-temperature Vapor deposition of High-purity Iridium Coatings from Cyclooctadiene complexes of Iridium" with the expectation of achieving similar success as both sets of precursors are taught to be applicable to CVD coating processes.

Nakabayashi et al. (6,271,077) in combination with Hoke et al., "Low-temperature Vapor deposition of High-purity Iridium Coatings from Cyclooctadiene complexes of Iridium fails to teach forming elemental iridium, utilizing air as the oxygen atmosphere and critical dimension of film.

With respect to the claims being elemental iridium, it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation in controlling the atmosphere to produce the desired final product which would include small enough oxygen in the atmosphere to produce an elemental film v. an oxide film.

With respect to the claims requiring air as the oxygen atmosphere, it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable expectation of achieving similar results regardless of the "type of oxygen atmosphere" utilized. It is well know in the art to utilize air atmosphere's to form metal oxide films. This would be depend upon the desired final product.

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With respect to the claims requiring critical dimension of the film, it is the Examiner's position that the critical dimensions of the final product are a "result effective variable" which is optimized by one skilled in the art depending upon the desired final product.

Allowable Subject Matter

5. Claims 6,10,12,24,25,31-34,40 and 41 are allowed.

Response to Amendment

6. Applicant's arguments with respect to claims 1-4,7,13-22,26,35,36,38,39,42 and 43 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that the prior art failed to teach an iridium organic solvent solution as the precursor.

Hoke et al., "Low-temperature Vapor deposition of High-purity Iridium Coatings from Cyclooctadiene complexes of Iridium teaches this limitation.

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7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 9/22/05
Brian K Talbot
Primary Examiner
Art Unit 1762

BKT